or urea in an anhydrous state or as an aqueous solution;

(d) optionally one or more ethoxylated alcohols having between 12 and 16 carbon atoms wherein the ethylene oxide add-on is less than 5 moles;

wherein components a, b, c, and optionally d thereof as the additive when combined with mixing with diesel fuel form a clear, stable microemulsion fuel composition having a viscosity within ± 10% of the original viscosity of the diesel fuel, and wherein the ratio of diesel fuel to additive ranges from about 50:50 to 99:1 by volume.

[a liquid combustible fuel wherein the liquid combustible fuel is selected from the group consisting of gasoline, kerosene, diesel fuel, heating fuel and other liquid petroleum distillates, which additive comprises:

(a) one or more alcohols selected from the group consisting of water soluble alcohols :

(i) ethanol in an anhydrous state, ethanol having between about 0.5 to 36% water by volume, ethanol having methanol up to 5% by volume of ethanol added, or ethanol having between about 0.5 and 36% water by volume and also having methanol up to 5% by volume of ethanol added,

(ii) optionally n-propanol, iso-propanol, n-butanol, iso-butanol, n-pentanol or iso-pentanol, and

(iii) combinations of (a) (i) and a (ii);

one or more of the following components selected from (b), (c) or combinations of (b) and (c):

b. one or more alcohols selected from the group consisting of:

(i) straight-chain or branched-chain, saturated or unsaturated alcohols having between about 6 and 12 carbon atoms;

(ii) optionally straight-chain or branched chain, saturated or unsaturated alcohols having between about 13 and 18 carbon atoms. and

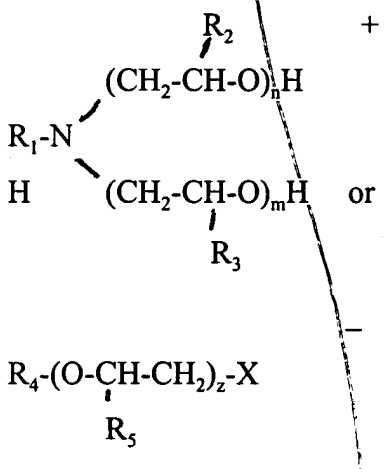
(iii) optionally one or more ethoxylated alcohols selected from the group of alcohols having between 6 and 18 carbon atoms wherein the ethylene oxide add-on is less than 5 moles; and

(iv) combinations of (b) (i), (b) (ii) and (b) (iii); and

(c) a fatty acid of the structure R-(C=O)-OH, wherein R is selected from alkyl, alkenyl or alkynyl having between about 10 to 24 carbon atoms, in combination with a source of nitrogen in an anhydrous state or as an aqueous solution selected from the group consisting of the ammonia, hydrazine, alkyl hydrazine, dialkyl hydrazine, urea , and ethanolamine, monoalkyl ethanolamine, and dialkyl ethanolamine wherein alkyl is independently selected from methyl, ethyl, n-propyl or isopropyl, wherein trialkylamines are excluded;

wherein component a and one or more of components b, c, or combinations of b and c thereof as the additive when combined with mixing with liquid combustible fuel form a clear, stable microemulsion fuel composition having a viscosity similar to that of the liquid combustible fuel, and where the ratio of liquid combustible fuel within ± 10% of the original viscosity of the fuel, additive ranges from about 50:50 to 99:1 by volume producing a microemulsion liquid fuel composition,

wherein said liquid fuel composition as a microemulsion excludes the presence of ethylene glycol, glycerine, polyethylene, polypropylene, added aromatic organic compounds, sulfur, sulfur compounds, metals, metal compounds, compounds of phenanthrene, and emulsifiers of the general formula:



wherein R_1 and R_4 each independently is a saturated or unsaturated, straight-chain or branched hydrocarbon aliphatic radical each of 4 to 24 carbon atoms selected from alkyl or alkenyl or R_4 is alkylphenyl of 1 to 18 carbon atoms in the optionally branched alkyl chain or H;

R_2, R_3 and R_5 each independently represent a methyl group or H, n plus m is an integer from 1 to 20; z is an integer from 0 to 15; and X is

-COO(-) or -OCH_2COO(-), wherein, substituents R_2, R_3 and R_5 are the same or different in different monomer units of each chain, and other organic diacids;

with the proviso that when the combustible fuel is gasoline component (c) is excluded and

with the proviso that when the additives for diesel fuel are anhydrous, component (c) is optional,

wherein the microemulsion formed meets existing U.S. Environmental Protection Agency (EPA) fuel property specifications for use in existing engines requiring little or no retrofit of the existing engines and when combusted emits reduced exhaust emissions to meet existing U.S. Environmental Protection Agency (EPA) exhaust emission specifications,

wherein said additives contain only atoms of carbon, hydrogen, oxygen and nitrogen.]

Please cancel pending claims 2 to 29 and pending Claims 30 to 58 without prejudice or disclaimer, and examine in their place the following newly presented Claims 59-77:

59. The ~~additive~~ combustible fuel composition of Claim 1 wherein:

in subpart (a) the alcohol of (a)(i) is anhydrous ethanol,

(a)(ii) is ethanol having between 0.5% and 5% water by volume of ethanol,

(a)(iii) is anhydrous or aqueous ethanol of subpart (a)(i) or (a)(ii) with methanol up to 5% by volume of ethanol;

in subpart (b) the alcohol of

(b)(i) is straight- or branched-chain alcohols having between 3 and 5 carbon atoms,

(b)(ii) is straight- or branched-chain alcohols having between 6 and 12 carbon atoms,

(b)(iii) is combinations of b(i) and b(ii);

in subpart (c) the ammonia or urea is present sufficient to neutralize about 40-80% of the fatty acid, and with the proviso that subpart (d) is excluded.

60. The ~~additive~~ combustion fuel composition of Claim 1 wherein:

in subpart (a) the alcohol of

(a)(i) is anhydrous ethanol,

(a)(ii) is ethanol having between 0.5% and 5% water by volume of ethanol,

(a)(iii) is anhydrous or aqueous ethanol of subpart (a)(i) or (a)(ii) with methanol up to 5% by volume of ethanol;

in subpart (b) the alcohol of

(b)(i) is straight- or branched-chain alcohols having between 3 and 5 carbon atoms, with the proviso that

(b)(ii) is excluded, and

(b)(iii) is excluded;

in subpart (c) the ammonia or urea is present sufficient to neutralize about 40-80% of the fatty acid; and with the proviso that subpart (d) is excluded.

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61. The ~~additive~~ combustion fuel composition of Claim 1 wherein:

in subpart (a) the alcohol of

(a)(i) is anhydrous ethanol,

(a)(ii) is ethanol having between 0.5% and 5% water by volume of ethanol,

(a)(iii) is anhydrous or aqueous ethanol of subpart (a)(i) or (a)(ii) with methanol up to 5% by volume of ethanol;

in subpart (b) the alcohol of with the proviso that

(b)(i) is excluded,

(b)(ii) is straight- or branched-chain alcohols having between 6 and 12 carbon atoms, with the proviso that

(b)(iii) excluded;

in subpart (c) the ammonia or urea is present sufficient to neutralize about 40-80% of the fatty acid; with the proviso that subpart (d) is excluded.

62. The ~~additive~~ combustion fuel composition of Claim 1 wherein:

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the ratio of subparts (a):(b):(c) is between about 50:45:5 to 50:25:25

63. The ~~additive~~ combustion fuel composition of Claim 1 wherein:
the ratio of subparts (a):(b):(c) is between about 60:35:5 to 60:20:20

64. The ~~additive~~ combustion fuel composition of Claim 1 wherein:
in subpart (a) the alcohol of
(a)(i) is excluded
(a)(ii) is ethanol having between 0.5% and 10% water by volume of ethanol,
(a)(iii) is aqueous ethanol of subpart (a)(ii) with methanol up to 5%
by volume of ethanol;
in subpart (b) the alcohol of
(b)(i) is straight- or branched-chain alcohols having between 3 and 5
carbon atoms,
(b)(ii) is straight- or branched-chain alcohols having between 6 and 12
carbon atoms,
(b)(iii) is combinations of b(i) and b(ii);
in subpart (c) the ammonia or urea is present sufficient to neutralize
about 40-80% of the fatty acid; and with the proviso that
subpart (d) is excluded.

C4 cont

65. The ~~additive~~ combustion fuel composition of Claim 1 wherein:
in subpart (a) the alcohol of
(a)(i) is excluded
(a)(ii) is ethanol having between 0.5% and 10% water by volume of ethanol,
(a)(iii) is aqueous ethanol of subpart (a)(ii) with methanol up to 5%
by volume of ethanol;
in subpart (b) the alcohol of
(b)(i) is excluded,
(b)(ii) is straight- or branched-chain alcohols having between 6 and 12

carbon atoms, with the proviso that

(b)(iii) excluded;

in subpart (c) the ammonia or urea is present sufficient to neutralize about 40-80% of the fatty acid; with the proviso that subpart (d) is excluded.

66. The ~~additive~~ combustion fuel composition of Claim 1 wherein:

the ratio of subparts (a):(b):(c) is between about 50:40:10 to 50:25:25

67. The ~~additive~~ combustion fuel composition of Claim 1 wherein:

the ratio of subparts (a):(b):(c) is between about 60:30:10 to 60:20:20

68. The ~~additive~~ combustion fuel composition of Claim 1 wherein:

in subpart (a) the alcohol of

(a)(i) is excluded

(a)(ii) is ethanol having between 10% and 25% water by volume of ethanol,

(a)(iii) is aqueous ethanol of subpart (a)(ii) with methanol up to 5% by volume of ethanol;

in subpart (b) the alcohol of

(b)(i) is straight- or branched-chain alcohols having between 3 and 5 carbon atoms,

(b)(ii) is straight- or branched-chain alcohols having between 6 and 12 carbon atoms,

(b)(iii) is combinations of b(i) and b(ii);

in subpart (c) the ammonia or urea is present sufficient to neutralize about 40-80% of the fatty acid; with the proviso that subpart (d) is excluded.

69. The ~~additive~~ combustion fuel composition of Claim 1 wherein:

in subpart (a) the alcohol of

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(a)(i) is excluded

(a)(ii) is ethanol having between 10% and 25% water by volume of ethanol,

(a)(iii) is aqueous ethanol of subpart (a)(ii) with methanol up to 5% by volume of ethanol;

in subpart (b) the alcohol of

(b)(i) is excluded,

(b)(ii) is straight- or branched-chain alcohols having between 6 and 12 carbon atoms, with the proviso that

(b)(iii) excluded;

in subpart (c) the ammonia or urea is present sufficient to neutralize about 40-80% of the fatty acid; with the proviso that

subpart (d) is excluded.

70. The ~~additive~~ combustion fuel composition of Claim 1 wherein:

the ratio of subparts (a):(b):(c) is between about 50:30:20 to 50:25:25

71. The ~~additive~~ combustion fuel composition of Claim 1 wherein:

in subpart (a) the alcohol of

(a)(i) is excluded

(a)(ii) is ethanol having between 10% and 25% water by volume of ethanol,

(a)(iii) is aqueous ethanol of subpart (a)(ii) with methanol up to 5% by volume of ethanol;

in subpart (b) the alcohol of

(b)(i) is straight- or branched-chain alcohols having between 3 and 5 carbon atoms,

(b)(ii) is straight- or branched-chain alcohols having between 6 and 12 carbon atoms,

(b)(iii) is combinations of b(i) and b(ii);

in subpart (c) the ammonia or urea is present sufficient to neutralize about 40-80% of the fatty acid;

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in subpart (d) is one or more ethoxylated alcohols having between 12 and 16 carbon atoms wherein the ethylene oxide add-on is less than 5 moles.

72. The ~~additive~~ combustion fuel composition of Claim 1 wherein:
in subpart (a) the alcohol of
(a)(i) is excluded
(a)(ii) is ethanol having between 10% and 25% water by volume of ethanol,
(a)(iii) is aqueous ethanol of subpart (a)(ii) with methanol up to 5% by volume of ethanol;
in subpart (b) the alcohol of
(b)(i) is excluded,
(b)(ii) is straight- or branched-chain alcohols having between 6 and 12 carbon atoms,
(b)(iii) excluded;
in subpart (c) the ammonia or urea is present sufficient to neutralize about 40-80% of the fatty acid;
in subpart (d) is one or more ethoxylated alcohols having between 12 and 16 carbon atoms wherein the ethylene oxide add-on is less than 5 moles;

C4 cont

73. The ~~additive~~ combustion fuel composition of Claim 1 wherein:
the ratio of subparts (a):(b):(c):(d) is between about 50:20:25:5 to 50:15:25:10.

74. The ~~additive~~ combustion fuel composition of Claim 1 wherein:
the ratio of subparts (a):(b):(c):(d) is between about 50:20:20:10 to 50:10:20:20.

75. The ~~additive~~ combustion fuel composition of Claim 1 wherein:
the ratio of diesel fuel to additive is between about 80:20 to 90:10.

76. The ~~additive~~ combustion fuel composition of Claim 1 wherein:
the ratio of diesel fuel to additive is between about 90:10 to 99:1.

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combustible fuel composition

~~The additive~~ of Claim 1 wherein:

in subpart (a) the alcohols of a)(i), (a)(ii), and (a)(iii) are derived from any feedstock from which alcohols containing one to two carbon atoms may be obtained;

in subpart (b) the alcohol of

(b)(i) is iso-propanol,

(b)(ii) is 2-ethyl hexanol, octanol, octadecanol, or C6-12 side stream mixtures,

(b)(iii) is combinations of b(i) and b(ii);

in subpart (c) the fatty acid is linoleic or oleic or combinations thereof;

in subpart (d) the ethoxylated alcohol has between 12 and 16 carbon molecules wherein the ethylene oxide add-on is 3. --

REMARKS

Applicant has amended the claims extensively in this CPA application. They reflect some of the modifications of the claims now pending in the equivalent PCT application, PCT/US99/00598 as examined by Ellen McAvoy in the USPTO at (1-703-308-0661). Applicant responded with similar claims to the Written Opinion in the PCT by Express Mail on March 7, 2000.

Applicant encloses a copy of the PCT International Preliminary Examination Report dated 12 July 2000. It was issued by Ellen McAvoy of the USPTO (telephone (703) 308-0661). Note that in Section V, the attached claims met the requirements of PCT article 33 (2)-(4).

If these claims are acceptable in the PCT examination by a U.S. patent examiner, then this should weigh heavily for patentability in the U.S. application now having essentially identical or more limited claims.

The amendments to claim 1 include:

Claiming only diesel fuel, wherein

component a is essentially ethanol,

component b is alcohols and/or alcohols having 6 to 12 carbon atoms. 3 to 5 carbon atoms and

component c is fatty acid and nitrogen and component d is ethoxylated alcohols, which